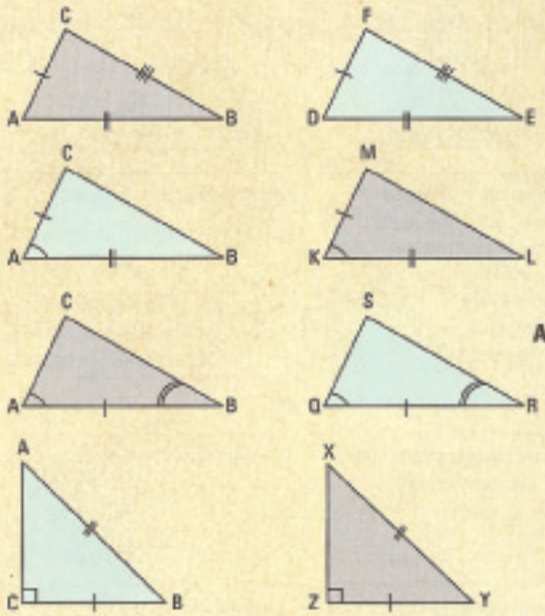
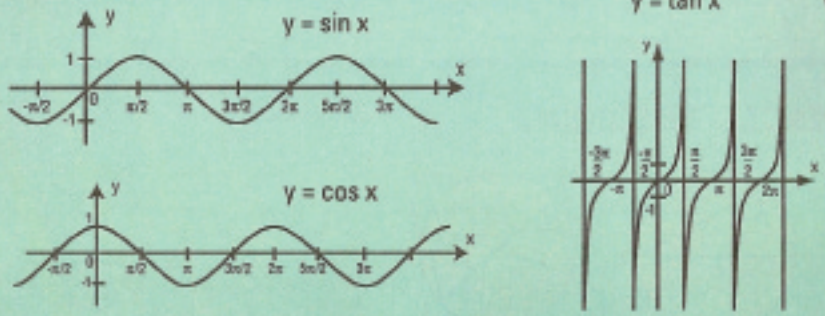
MATH SKILLS

GEOMETRY

Congruency Cases:



GRAPHS OF TRIGONOMETRIC & CIRCULAR FUNCTIONS



TRIGONOMETRY

$\sin(A+B) = \sin A \cos B + \cos A \sin B$

$\sin(A-B) = \sin A \cos B - \cos A \sin B$

$\sin 2A = 2 \sin A \cos A$

$\sin \frac{1}{2} A = \pm\sqrt{(1 - \cos A)/2}$

$\cos(A+B) = \cos A \cos B - \sin A \sin B$

$\cos(A-B) = \cos A \cos B + \sin A \sin B$

$\cos 2A = \cos^2 A - \sin^2 A = 2\cos^2 A - 1 = 1 - 2\sin^2 A$

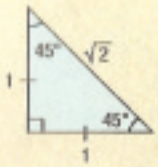
$\cos \frac{1}{2} A = \pm\sqrt{(1 + \cos A)/2}$

$\tan(A+B) = \tan A + \tan B/(1 - \tan A \tan B)$

$\tan(A-B) = \tan A - \tan B/(1 + \tan A \tan B)$

$\tan 2A = 2 \tan A/(1 - \tan^2 A)$

$\tan \frac{1}{2} A = \pm\sqrt{(1 - \cos A)/(1 + \cos A)} = 1 - \cos A/\sin A = \sin A/1 + \cos A$



$\sin 45° = \frac{1}{\sqrt{2}}$

$\cos 45° = \frac{1}{\sqrt{2}}$

$\tan 45° = 1$

$1 + \tan^2\theta = \sec^2\theta$

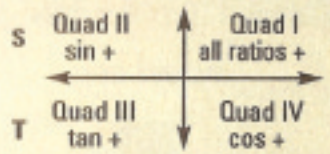
$1 + \cot^2\theta = \csc^2\theta$

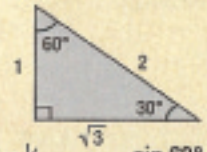
$\tan\theta = \sin\theta/\cos\theta$

$\sin^2\theta + \cos^2\theta = 1$

$\cos^2 - \sin^2 = \cos^2$ (only if sin=0)

CAST





$\sin 30° = \frac{1}{2}$

$\cos 30° = \frac{\sqrt{3}}{2}$

$\tan 30° = \frac{1}{\sqrt{3}}$

$\sin 60° = \frac{\sqrt{3}}{2}$

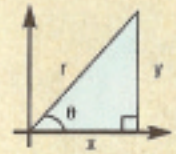
$\cos 60° = \frac{1}{2}$

$\tan 60° = \sqrt{3}$

$\sin\theta = y/r$ (opposite/hypotenuse) $= 1/\csc\theta$

$\cos\theta = x/r$ (adjacent/hypotenuse) $= 1/\sec\theta$

$\tan\theta = y/x$ (opposite/adjacent) $= 1/\cot\theta$



Law of Sines: $a/\sin A = b/\sin B = c/\sin C$

Law of Cosines: $a^2 = b^2 + c^2 - 2bc \cos A$

$b^2 = a^2 + c^2 - 2ac \cos B$

$c^2 = a^2 + b^2 - 2ab \cos C$

